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4

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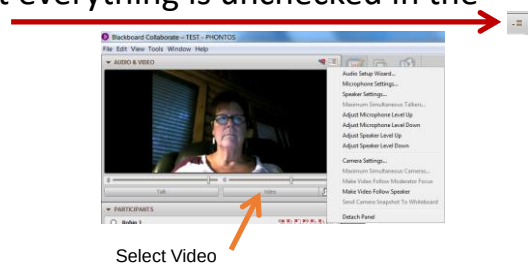

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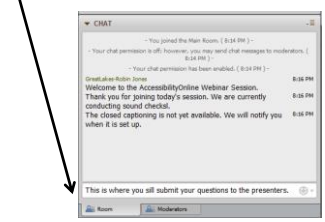

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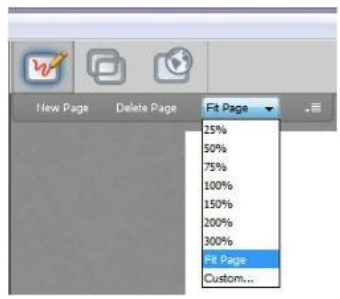

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10

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- The CIO Council's Accessibility Community of Practice has published a library of 508 Best Practices at www.Section508.gov

11

Section 508 Best Practices Webinar Upcoming Dates for 2017

Webinars dates will be bi-monthly during 2017.

- January, March, May, July, September, November

Next Webinar: September 26, 2017

- Topic: Revised Section 508 Chapter 5 Software
- Time: 1:00 to 2:30 p.m. Eastern

This webinar series is a collaborative program between the Accessibility Community of Practice of the CIO Council and The U.S. Access Board.

12

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13

Revised Section 508 Chapter 4 Hardware (including Mobile)

Bruce Bailey, IT Accessibility Specialist
Timothy Creagan, Senior Accessibility Specialist

July 25, 2017

14

This Webinar is Fourth in a Series

For an introduction and overview of the Revised Standards:
Section 508 Refresh — ICT Final Standards and Guidelines (2017)
January 31, 2017 - program 11610

For a discussion of the new requirements for documents and websites:
WCAG 2.0 and the Revised Section 508 Standards
March 28, 2017 - program 110612

For an overall comparison, with a focus on application and scoping:
Old versus New: Original Section 508 Standards (2000) compared to the Revised Section 508 Standards (2017)
May 30, 2017 - program 110613

15

Agenda

Today's webinar focuses on the 508 hardware accessibility requirements from Chapter 4, with special attention to how they are applied to telecommunications products:

- How do the Revised 508 Standards (2017) compare with the Original 508 Standards (2000)?
- What has changed? What is new?
- How do the Revised 508 Standards apply to mobile?
- Examples of using the Revised 508 Standards for hardware:
  - Evaluating the accessibility of desk phone versus a smart phone

16

Focus for Today's Webinar

- 402 Closed Functionality
- 407 Operable Parts
- 412 ICT with Two-Way Voice

Why these sections?

- These are the longest and most detailed sections in the Hardware chapter, and include several exceptions.
- These sections have the greatest applicability for mobile (but are not the only sections that apply to mobile).
- Other sections in the Hardware chapter are shorter and more straightforward.

17

Overview of Major Changes

Revised Standards are organized by function, not product type.

Revised Standards make reference to external industry consensus standards as needed.

Formatting of Revised Standards borrows from industry consensus standards.

- Numbering shows hierarchy of provisions
- Each section starts with a general charging statement
- Subsections may have exceptions
- Subsections may have subsections

Requirements for real-time text functionality is "reserved".

18

High Level Comparison

Original (2000)

1194.2 Application.

1194.23 Telecommunications products.

1194.24 Video and multimedia products.

1194.25 Self contained, closed products.

1194.26 Desktop and portable computers.

Revised (2017)

508 Chapter 2: Scoping Requirements

- E206 Hardware
  - E206.1 General

Chapter 4: Hardware

- 401 General
  - 401.1 Scope
    - Includes exception for assistive technology

19

Scoping of Hardware from Chapters 2 and 4

E206 Hardware

- E206.1 General. Where components of ICT are hardware and transmit information or have a user interface, such components shall conform to the requirements in Chapter 4.

401 General

- 401.1 Scope. The requirements of Chapter 4 shall apply to ICT that is hardware where required by 508 Chapter 2 (Scoping Requirements), 255 Chapter 2 (Scoping Requirements), and where otherwise referenced in any other chapter of the Revised 508 Standards or Revised 255 Guidelines.
- EXCEPTION: Hardware that is assistive technology shall not be required to conform to the requirements of this chapter.

20

Overview of 402 Closed Functionality

402.1 General

402.2 Speech-Output Enabled

402.3 Volume

402.4 Character on Display Screens

402.5 Characters on Variable message Signs

21

General Requirement for 402 Closed Functionality is Familiar

Original § 1194.25 (a)

Self contained products shall be usable by people with disabilities without requiring an end-user to attach assistive technology to the product. Personal headsets for private listening are not assistive technology.

Revised 402.1 General

ICT with closed functionality shall be operable without requiring the user to attach or install assistive technology other than personal headsets or other audio couplers, and shall conform to 402.

22

Definition for Closed Functionality is Familiar

Original (2000)
§ 1194.4 Definitions

Self Contained, Closed Products

- Products that generally have embedded software and are commonly designed in such a fashion that a user cannot easily attach or install assistive technology.
- These products include, but are not limited to, information kiosks and information transaction machines, copiers, printers, calculators, fax machines, and other similar types of products.

Revised (2017)
E103.4 Defined Terms

Closed Functionality

- Characteristics that limit functionality or prevent a user from attaching or installing assistive technology.
- Examples of ICT with closed functionality are self-service machines, information kiosks, set-top boxes, fax machines, calculators, and computers that are locked down so that users may not adjust settings due to a policy such as Desktop Core Configuration.

23

New Requirement for Closed Products to be Speech-Output Enabled

Original (2000)

§ 1194.25 (a) Self contained products shall be usable by people with disabilities…

Revised (2017)

402 Closed Functionality

402.1 General

402.2 Speech-Output Enabled

ICT with a display screen shall be speech-output enabled for full and independent use by individuals with vision impairments.

24

Overview of 402.2 Speech-Output Enabled

402.2 Speech-Output Enabled

- Mirrors requirements from ADA for ATMs and fare machines
- Six Exceptions
- Five sub sections

25

402.2 Exceptions (1-3)

1. Variable message signs conforming to 402.5 shall not be required to be speech-output enabled.
2. Speech output shall not be required where ICT display screens only provide status indicators and those indicators conform to 409.
3. Where speech output cannot be supported due to constraints in available memory or processor capability, ICT shall be permitted to conform to 409 in lieu of 402.2.

26

402.2 Exceptions (4-6)

4. Audible tones shall be permitted instead of speech output where the content of user input is not displayed as entered for security purposes, including, but not limited to, asterisks representing personal identification numbers.
5. Speech output shall not be required for: The machine location; date and time of transaction; customer account number; and the machine identifier or label.
6. Speech output shall not be required for advertisements and other similar information unless they convey information that can be used for the transaction being conducted.

27

Overview of 402.2 Subsections

402.2.1 Information Displayed On-Screen

402.2.2 Transactional Outputs

402.2.3 Speech Delivery Type and Coordination

402.2.4 User Control

402.2.5 Braille Instructions

28

402.2.1 and 402.2.2

402.2.1 Information Displayed On-Screen

- Speech output shall be provided for all information displayed on-screen.

402.2.2 Transactional Outputs

- Where transactional outputs are provided, the speech output shall audibly provide all information necessary to verify a transaction.

29

402.2.3 Speech Delivery Type and Coordination

- Speech output shall be delivered through a mechanism that is readily available to all users, including, but not limited to, an industry standard connector or a telephone handset.
- Speech shall be recorded or digitized human, or synthesized.
- Speech output shall be coordinated with information displayed on the screen.

30

402.2.4 User Control

- Speech output for any single function shall be automatically interrupted when a transaction is selected.
- Speech output shall be capable of being repeated and paused.

31

402.2.5 Braille Instructions

- Where speech output is required by 402.2, braille instructions for initiating the speech mode of operation shall be provided.
- Braille shall be contracted and shall conform to 36 CFR part 1191, Appendix D, Section 703.3.1.
- EXCEPTION: Devices for personal use shall not be required to conform to 402.2.5.

32

402.3 Volume

ICT that delivers sound, including speech output required by 402.2, shall provide volume control and output amplification conforming to 402.3.

- EXCEPTION: ICT conforming to 412.2 shall not be required to conform to 402.3.

- 402.3.1 Private Listening
- 402.3.2 Non-private Listening

33

Requirement for Private Listening is Familiar

Original (2000) § 1194.25 (e)

- When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening…

Revised (2017) 402.3.1

- Where ICT provides private listening, it shall provide a mode of operation for controlling the volume.
- Where ICT delivers output by an audio transducer typically held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.

34

Changes to Requirement for Private Listening

Original (2000) § 1194.25 (e)

- When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening…

Revised (2017) 402.3.1

- Requirement for ICT to provide volume control rather than audio of a "standard signal level".
- The requirement for "effective magnetic wireless" could be met a few ways:
  - Headphone jack
  - Telephone style handset
  - Bluetooth

35

Requirement for Non-private Listening is Familiar

Original (2000) § 1194.25 (f)

- When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB…
- A function shall be provided to automatically reset the volume to the default level after every use.

Revised (2017) 402.3.2

- Where ICT provides non-private listening, incremental volume control shall be provided with output amplification up to a level of at least 65 dB.
- A function shall be provided to automatically reset the volume to the default level after every use.

36

Changes to Requirement for Non-private Listening

Original (2000) § 1194.25 (f)

… Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable…

Revised (2017) 402.3.2

- Does not include requirement for volume gain over ambient noise level.
  - Commenters from industry explained requirement was problematic or even infeasible.

37

402.4 Characters on Display Screens – New

- At least one mode of characters displayed on the screen shall be in a sans serif font.
- Where ICT does not provide a screen enlargement feature, characters shall be 3/16 inch (4.8 mm) high minimum based on the uppercase letter “I”.
- Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

38

402.5 Characters on Variable Message Signs – New

Characters on variable message signs shall conform to section 703.7 Variable Message Signs of ICC A117.1-2009 (incorporated by reference, see 702.6.1).

Definition from E103.4 for Variable Message Signs (VMS):

- Non-interactive electronic signs with scrolling, streaming, or paging-down capability.
- An example of a VMS is an electronic message board at a transit station that displays the gate and time information associated with the next train arrival.

Section 703.7 from ICC A117.1 is available online at no cost

39

Requirement for 403 Biometrics is Familiar

Original (2000) §§ .25 and .26 (b)

When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.

Revised (2017) 403.1 General

Where provided, biometrics shall not be the only means for user identification or control.

EXCEPTION: Where at least two biometric options that use different biological characteristics are provided, ICT shall be permitted to use biometrics as the only means for user identification or control.

40

Requirement for 404 Preservation of Information Provided for Accessibility is Familiar

Original (2000) § 1194.23 (j)

…Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.

Revised (2017) 404.1 General

ICT that transmits or converts information or communication shall not remove non-proprietary information provided for accessibility or shall restore it upon delivery.

41

405 Privacy – New

405.1 General

- The same degree of privacy of input and output shall be provided to all individuals.
- When speech output required by 402.2 is enabled, the screen shall not blank automatically.

42

Requirement for 406 Standard Connections is Familiar

Original (2000) § 1194.26 (d)

Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards.

Revised (2017) 406.1 General

Where data connections used for input and output are provided, at least one of each type of connection shall conform to industry standard non-proprietary formats.

43

Overview of 407 Operable Parts

- 407.1 General

  Where provided, operable parts used in the normal operation of ICT shall conform to 407
- 407.2 Contrast
- 407.3 Input Controls
- 407.4 Key Repeat
- 407.5 Timed Response
- 407.6 Operation
- 407.7 Tickets, Fare Cards, and Keycards
- 407.8 Reach Height and Depth

44

407.2 Contrast – New

- Where provided, keys and controls shall contrast visually from background surfaces.
- Characters and symbols shall contrast visually from background surfaces with either light characters or symbols on a dark background or dark characters or symbols on a light background.

45

407.3 Input Controls

407.3 Input Controls

- At least one input control conforming to 407.3 shall be provided for each function.
- EXCEPTION: Devices for personal use with input controls that are audibly discernable without activation and operable by touch shall not be required to conform to 407.3.

  - 407.3.1 Tactilely Discernible
    Input controls shall be operable by touch and tactilely discernible without activation.

46

Requirement for Tactilely Discernible is Familiar

Original (2000) § 1194.23 (k) (1)

Controls and keys shall be tactilely discernible without activating the controls or keys.

Revised (2017) 407.3.1

Input controls shall be operable by touch and tactilely discernible without activation.

47

407.3.2 Alphabetic Keys – New

Where provided, individual alphabetic keys shall be arranged in a QWERTY-based keyboard layout and the “F” and “J” keys shall be tactilely distinct from the other keys.

48

407.3.3 Numeric Keys – New

- Where provided, numeric keys shall be arranged in a 12-key ascending or descending keypad layout.
- The number five key shall be tactilely distinct from the other keys.
- Where the ICT provides an alphabetic overlay on numeric keys, the relationships between letters and digits shall conform to ITU-T Recommendation E.161 (incorporated by reference, see 702.7.1).

49

Requirement for 407.4 Key Repeat is Familiar

Original (2000) § 1194.23 (k) (3)

If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.

Revised (2017) 407.4

Where a keyboard with key repeat is provided, the delay before the key repeat feature is activated shall be fixed at, or adjustable to, 2 seconds minimum.

50

407.8 Reach Height and Depth

- At least one of each type of operable part of stationary ICT shall be at a height conforming to 407.8.2 or 407.8.3 according to its position established by the vertical reference plane specified in 407.8.1 for a side reach or a forward reach.
- Operable parts used with speech output required by 402.2 shall not be the only type of operable part complying with 407.8 unless that part is the only operable part of its type.

51

Overview of 407.8 Reach Height and Depth

- 407.8.1 Vertical Reference Plane
- 407.8.2 Side Reach
- 407.8.3 Forward Reach – New

Note: 407.8 only applies to Stationary ICT, so Reach Height and Depth does not apply to Mobile.

52

Requirement for Reach Height and Depth is Familiar

Original (2000) § 1194.25 (j)

Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following:

Revised (2017) 407.8

At least one of each type of operable part of stationary ICT shall be at a height conforming to 407.8.2 or 407.8.3 according to its position established by the vertical reference plane specified in 407.8.1 for a side reach or a forward reach.

53

Changes to Reach Height and Depth

Original (2000) § 1194.25 (j)

Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following…

Revised (2017) 407.8

- Uses "stationary ICT" as the scoping description
- Allows for a forward approach
- Does not rely upon illustrations (i.e., figures 1 and 2)
  - Measurements are written out in detail

54

408 Display Screens – Partially New

408.1 General

- Where provided, display screens shall conform to 408.

408.2 Visibility

- Where stationary ICT provides one or more display screens, at least one of each type of display screen shall be visible from a point located 40 inches (1015 mm) above the floor space where the display screen is viewed.

55

408 Display Screens – Requirement Regarding Flashing is Familiar

Original (2000) § 1194.25 (i)

Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

Revised (2017) 408.3 Flashing

Where ICT emits lights in flashes, there shall be no more than three flashes in any one-second period.

EXCEPTION: Flashes that do not exceed the general flash and red flash thresholds defined in WCAG 2.0 (incorporated by reference, see 702.10.1) are not required to conform to 408.3.

56

Requirement for 409 Status Indicators is Familiar

Original (2000) § 1194.23(k) (4)

The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.

Revised (2017) 409.2 General

Where provided, status indicators shall be discernible visually and by touch or sound.

57

Requirement for 410 Color Coding is Familiar

Original (2000) § 1194.25 (g)

Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

Revised (2017) 410.1 General

Where provided, color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

58

Overview of 412 ICT with Two-Way Voice Communication

412.1 General

412.2 Volume Gain

412.3 Interference Reduction and Magnetic Coupling

412.4 Digital Encoding of Speech

412.5 Real-Time Text Functionality

412.6 Caller ID

412.7 Video Communication

59

412 ICT with Two-Way Voice Communication

412.1 General

- ICT that provides two-way voice communication shall conform to 412.

412.2 Volume Gain

- ICT that provides two-way voice communication shall conform to 412.2.1 or 412.2.2.
  - 412.2.1 Volume Gain for Wireline Telephones
  - 412.2.2 Volume Gain for Non-Wireline ICT

60

Requirement for Volume Gain for Wireline Telephones is Familiar

Original (2000) § 1194.23 (f) and (g)

- For transmitted voice signals … shall provide a gain adjustable up to a minimum of 20 dB.
- For incremental volume control, at least one intermediate step of 12 dB of gain…
- If the telecommunications product allows … to adjust the receive volume, a function … to automatically reset the volume to the default level after every use.

Revised (2017) 412.2.1

Volume gain conforming to 47 CFR 68.317 shall be provided on analog and digital wireline telephones.

- Only substantial difference is 18 dB gain instead of 20

61

412.2.1 (Wireline) and 412.2.2 (Wireless)

412.2.1 Volume Gain for Wireline Telephones

- Volume gain conforming to 47 CFR 68.317 shall be provided on analog and digital wireline telephones.

412.2.2 Volume Gain for Non-Wireline ICT

- A method for increasing volume shall be provided for non-wireline ICT.

62

412.3 Interference Reduction and Magnetic Coupling

Where ICT delivers output by a handset or other type of audio transducer that is typically held up to the ear, ICT shall reduce interference with hearing technologies and provide a means for effective magnetic wireless coupling in conformance with 412.3.1 or 412.3.2.

- 412.3.1 Wireless Handsets
- 412.3.2 Wireline Handsets

63

Requirement for Interference Reduction and Magnetic Coupling is Familiar

Original (2000) § 1194.23 (h) and (i)

- Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.
- Interference to hearing technologies …shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.

Revised (2017) 412.3

Where ICT delivers output by a handset or other type of audio transducer that is typically held up to the ear, ICT shall reduce interference with hearing technologies and provide a means for effective magnetic wireless coupling in conformance with 412.3.1 or 412.3.2.

64

412.3.1 and 412.3.2 – New

412.3.1 Wireless Handsets

- ICT in the form of wireless handsets shall conform to ANSI/IEEE C63.19-2011 (incorporated by reference, see 702.5.1).

412.3.2 Wireline Handsets

- ICT in the form of wireline handsets, including cordless handsets, shall conform to TIA-1083-B (incorporated by reference, see 702.9.1).

65

412.4 Digital Encoding of Speech – New

ICT in IP-based networks shall transmit and receive speech that is digitally encoded in the manner specified by ITU-T Recommendation G.722.2 (incorporated by reference, see 702.7.2) or IETF RFC 6716 (incorporated by reference, see 702.8.1).

66

412.5 Real-Time Text Functionality

Reserved (412.5 is the place holder), in deference to ongoing FCC rulemaking on RTT.

Most recent rulemaking:

- FCC Report and Order, released Dec. 16, 2016:
- Petition for Rulemaking to Update the Commission's Rules for Access to Support the Transition from TTY to Real-Time Text Technology; and
- Petition for Waiver of Rules Requiring Support of TTY Technology

67

Requirement for 412.6 Caller ID is Familiar

Original (2000) § 1194.23 (e)

Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.

Revised (2017) 412.6 Caller ID

Where provided, caller identification and similar telecommunications functions shall be visible and audible.

68

412.7 Video Communication – New

Where ICT provides real-time video functionality, the quality of the video shall be sufficient to support communication using sign language.

69

413 Closed Caption Processing Technologies is Familiar

Original (2000) § 1194.24 (a)

- All analog television displays 13 inches and larger…
- …widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners…
- …shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.

Revised (2017) 413

413.1 General

- Where ICT displays or processes video with synchronized audio, ICT shall provide closed caption processing technology that conforms to 413.1.1 or 413.1.2.
- 413.1.1 Decoding and Display of Closed Captions
- 413.1.2 Pass-Through of Closed Caption Data

70

Changes to Requirement for Closed Caption Processing Technologies

Original (2000) § 1194.24 (a)

- All analog television displays 13 inches and larger…
- …widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners…
- …shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.

Revised (2017) 413

- Removed exclusion for small screen
- Removed distinction between analog and digital TVs
- Focus on core feature of ICT (video with audio) rather than listing products

71

414 Audio Description Processing Technologies is Familiar

Original (2000) § 1194.24 (b)

Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.

Revised (2017) 414

414.1 General

Where ICT displays or processes video with synchronized audio, ICT shall provide audio description processing technology conforming to 414.1.1 or 414.1.2.

- 414.1.1 Digital Television Tuners
- 414.1.2 Other ICT

72

Changes to Requirements for Audio Description Processing Technologies

Original (2000) § 1194.24 (b)

Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.

Revised (2017) 415

- Removed reference to SAP (analog standard, mostly used for non-English languages)
- References DTV standard (i.e., ATSC A/53) which is being used for AD
- Applies to ICT generally, not only "television tuners"

73

415 User Controls for Captions and Audio Descriptions – New

415.1 General

- Where ICT displays video with synchronized audio, ICT shall provide user controls for closed captions and audio descriptions conforming to 415.1.
- EXCEPTION: Devices for personal use shall not be required to conform to 415.1 provided that captions and audio descriptions can be enabled through system-wide platform settings.

- 415.1.1 Caption Controls
- 415.1.2 Audio Description Controls

74

Evaluating ICT with Two-Way Voice Communication

Chapter 4 Hardware

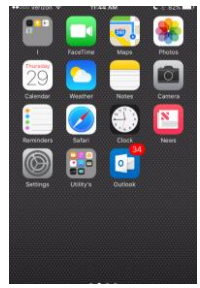
75

Evaluating Telephones and the Revised 508 Standards

Scenarios:

- Modern IP Desktop Phone

- Modern Mobile Phone (a.k.a. Smartphone)



76

Evaluating an IP Desktop Phone with the Revised Section 508 Hardware Chapter 4

- Key Characteristics:
  - Lots of tactile buttons
  - Large display
    - No use of color
    - No video
    - Not a touchscreen
  - Uses IP
  - Linked to desktop PC

77

IP Desk Phone: First Pass

- ~~401 General~~
- **402 Closed Functionality**
- ~~403 Biometrics~~
- 404 Preservation of Information Provided for Accessibility
- 405 Privacy
- 406 Standard Connections
- **407 Operable Parts**
- 408 Display Screens
- 409 Status Indicators
- 410 Color Coding
- 411 Audible Signals
- **412 ICT with Two-Way Communication**
- ~~413 Closed Caption Processing Technologies~~
- ~~414 Audio Description Processing Technologies~~
- ~~415 User Controls for Captions and Audio Descriptions~~

78

IP Desk Phone: Easy Stuff First

• 404 Preservation of Information Provided for Accessibility	✓ not applicable
• 405 Privacy	✓ conforms
• 406 Standard Connections	✓ conforms (RJ45)
• 408 Display Screen	✓ only applies to stationary ICT
• ***409 Status Indicators***	??? Needs attention!
• 410 Color Coding	✓ not applicable
• 411 Audible Signals	✓ conforms (most models)

79

Evaluating an IP Desk Phone for Speech-Output Enabled

402.2 Speech-Output Enabled

- ICT with a display screen shall be speech-output enabled for full and independent use by individuals with vision impairments.

EXCEPTIONS:

2. Where speech output cannot be supported due to constraints in available memory or processor capability, ICT shall be permitted to conform to 409 in lieu of 402.2.

80

Evaluating an IP Desk Phone for Operable Parts

407 Operable Parts	
• 407.2 Contrast	✓ conforms (most models)
• 407.3 Input Controls	
• **407.3.1 Tactilely Discernable**	??? Needs attention!
• 407.3.2 Alphabetic Keys	✓ not applicable
• 407.3.3 Numeric Keys	✓ conforms
• **407.4 Key Repeat**	??? Needs attention!
• **407.5 Timed Response**	??? Needs attention!
• 407.6 Operation	✓ conforms
• 407.7 Tickets…	✓ not applicable
• 407.8 Reach Height and Depth	✓ not applicable

81

Evaluating an IP Desk Phone for ICT With Two-Way Voice Communication

• 412.2 Volume Gain:	
• 412.2.1 Volume Gain for Wireline Telephones	✓ conforms (most models)
• 412.3 Interference Reduction and Magnetic Coupling	
• 412.3.2 Wireline Handsets	✓ conforms (most models)
• 412.4 Digital Encoding of Speech	✓ conforms (most models)
• ***412.5 Real-Time Text Functionality***	??? Reserved for now, but this will be an issue in the future!
• ***412.6 Caller ID***	??? Needs attention!
• 412.7 Video Communication	✓ not applicable

82

Evaluating an IP Desk Phone with the Revised 508 Chapter 4 Hardware

- 407.2 Contrast – Check, but usually not an issue.
- **407.3.1 Tactilely Discernible – This needs careful evaluation!**
- 407.4 Key Repeat – Check, can probably be adjusted.
- 407.5 Timed Response – Check, can probably be adjusted.
- 411 Audible Signals – Check, but usually not an issue.

83

Evaluating an IP Desk Phone with the Revised 508 Chapter 4 Hardware (continued)

- 412.2 Volume Gain – Check, but most models will conform (and also satisfy 412.2.1).
- 412.3 Interference Reduction… – Check, but most models will conform (and also satisfy 412.3.2).
- 412.4 Digital Encoding of Speech – Check, but most models will conform (G.722.2 is now common).
- **412.5 Real-Time Text Functionally – Ask, this will be in issue in the future!**
- **412.6 Caller ID – Check, this usually an issue!**

84

Addressing Common Accessibility Issues with IP Phones

- 407.3.1 Tactilely Discernible
- 407.4 Key Repeat
- 407.5 Timed Response

- 412.5 Real-Time Text

- 412.6 Caller ID

- Raise the 508 issues early with your vendor
  - Much of the display behavior is customizable and can be configured to conform to 508
  - Program the “soft keys” so that the screen is not essential
- Support for RTT will almost certainly be requirement in the future
  - Ask your vendor about their RTT roadmap
- Talking Caller ID probably requires a third party product

85

Evaluating a Smartphone with the Revised Section 508 Hardware Chapter 4

Key Characteristics:

- Touchscreen is the main or only interface
- Plays video
- Might support two-way video calling

86

Smartphone: First Pass

- ~~401 General~~
- **402 Closed Functionality**
- 403 Biometrics
- 404 Preservation of Information Provided for Accessibility
- ~~405 Privacy~~
- 406 Standard Connections
- **407 Operable Parts**
- ~~408 Display Screens~~
- 409 Status Indicators
- 410 Color Coding
- 411 Audible Signals
- **412 ICT with Two-Way Communication**
- 413 Closed Caption Processing Technologies
- 414 Audio Description Processing Technologies
- 415 User Controls for Captions and Audio Descriptions

87

Smartphone: Easy Stuff First

• 403 Biometrics	??? Needs attention!
• 404 Preservation of Information Provided for Accessibility	✓ conforms
• 406 Standard Connections	✓ conforms (jack or Bluetooth)
• 409 Status Indicators	??? Needs attention!
• 410 Color Coding	??? Needs attention!
• 411 Audible Signals	✓ conforms (vibrate for ring)

88

Evaluating a Smartphone for 402 Closed Functionality

402.2 Speech-Output Enabled

- ICT with a display screen shall be speech-output enabled for full and independent use by individuals with vision impairments.

- Must select model with built-in screen reading feature
  - All iOS phone
  - Some Android phones

- 402.2 has five subsections
  - None of them are an issue

89

Evaluating a Smartphone for Operable Parts

407 Operable Parts

- 407.2 Contrast
- 407.3 Input Controls
- 407.4 Key Repeat
- 407.5 Timed Response
- 407.6 Operation
- 407.7 Tickets…
- 407.8 Reach Height and Depth

Assuming an accessible OS…

✓ conforms (most models)

✓ addressed by exception (devices for personal use)

✓ conforms

✓ conforms

✓ conforms

✓ not applicable

✓ not applicable

90

Evaluating a Smartphone for ICT With Two-Way Voice Communication

• 412.2.2 Volume Gain for Non-Wireline ICT	✓ conforms (mobile phones all have volume controls)
• 412.3.1 Wireless Handsets	✓ conforms (most models)
• 412.4 Digital Encoding of Speech	✓ not applicable
• 412.5 RTT Functionality	✓ Reserved
• 412.6 Caller ID	✓ conforms (most models)
• 412.7 Video Communication	??? Needs attention!

91

Evaluating a Smartphone for Closed Captioning and Audio Description

• 413 Closed Caption Processing Technologies	✓ conforms (most models)
• 414 Audio Description Processing Technologies	✓ conforms (most models)
• 415 User Controls for Captions and Audio Descriptions	✓ conforms (most models) because of the exception for system-wide settings on devices for personal use

92

Evaluating a Smartphone with the Revised 508 Chapter 4 Hardware

402.2 Speech Output Enabled

- Selection of models limited (iOS and some Android)
- Check that the OS screen reader provides 409, 410, and 412.6

403 Biometrics

- If present, can it be configured to be optional?

412.3 Interference Reduction and Magnetic Coupling

- Most models will conform (and also satisfy 412.3.1), but need to check

- If the phone support video calling, does it meet 412.7?
- If the phone supports playing of videos, does it support Caption and Audio Description per 413/414/415?

93

Resources, Questions and Contact Information

94

.gov Resources

www.Access-Board.gov – Section 508 Standards and Section 255 Guidelines, technical assistance:

- ICT Final rule (2017)
- Webinars – Section 508 Best Practices
- More guidance material under development

GSA Government-wide Section 508 Accessibility Program: www.section508.gov

95

Questions

You may type and submit questions in the Chat Area Text Box or press "Control-M" and enter text in the Chat Area

96

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97